
Equipment description

Cabinets

RPE equipment is housed in standard SL-1 cabinets. A QCA8, QCA37, or QCA74 cabinet is required at the remote location to provide power for the QBL14 Power Distribution Box that powers the carrier shelves. A QCA6, QCA8, QCA23, QCA37, or QCA74 cabinet may be used at the local location to house the QBL14 Power Distribution Box.

The RPE carrier shelves may be installed in any SL-1 cabinet (except QCA60). They must be within 3.8 m (12.5 ft) of the QBL14 Power Distribution Box.

Carrier shelves

The following carrier shelves are available:

- QSD6 left-hand mount shelf
- QSD11 right-hand mount shelf

Function

The carrier shelves accommodate the circuit cards listed in Table 1. These cards can function only in the designated card positions shown in Figure 3.

Table 1
Carrier shelf circuit cards

Location	Product code	Description	Quantity
Local and remote	QPC62	1.5 Mbaud converter	2 per network loop
	QPC66	2.0 Mbaud converter	2 per network loop
	QPC67	Carrier maintenance	1 per shelf
	QPC85, QPC190, QPC355	5/12-V converter	1 per shelf (Note)
	QPC99	Carrier interface	2 per network loop
Local only	QPC63	Local carrier buffer	1 per network loop
Remote only	QPC65	Remote peripheral switch	1 per network loop
Note: QPC190 and QPC355 circuit cards can be used only in QSD11B series B and QSD6B series B shelves or QSD11C and QSD6C shelves. QSD11B series A and QSD6B series A shelves only work with a QPC85 circuit card. Using the QPC190 in the earlier vintage shelves will damage both the QPC190 itself and the QPC99 carrier interface.			

Quantity

One shelf is required at the local and remote locations for each two network loops.

Location

Any PE shelf position in a cabinet must be within 3.8 m (12.5 ft) of the QBL14 Power Distribution Box that powers the shelf.

Features

The carrier shelf features are as follows:

- steel and aluminum construction
- printed circuit backplane
- fully connectorized power and signaling connections
- international rack mounting standards (48.3 cm [19 in.])
- approximate weight of 15.9 kg (35 lbs) when fully equipped

PE shelves

Left- or right-hand mount shelves are used. See *Meridian 1 equipment identification* (553-3001-154) for a description of these.

QPC62 1.5 Mbaud Converter Card**Function**

The QPC62 converts an SL-1 loop into two carrier loops. It contains switch-selectable line equalizers.

Note: QPC62C converters, and converters of later vintage, must be used when the 12 V option setting is required.

Quantity

Two are required for each network loop: one in the local carrier shelf, and one in the remote carrier shelf.

Location

Place the QPC62 in the following positions:

- slot 2 for the first network loop in each carrier shelf
- slot 6 for the second network loop in each carrier shelf

QPC63 Local Carrier Buffer Card

Function

The QPC63 performs the following functions:

- generates a 1.544-MHz clock from the 2.048-MHz clock
- provides enables and decodes outgoing and incoming data
- delays incoming data from the carrier so that its frame, relative to the outgoing data frame, is equivalent to that returning from a peripheral buffer
- relays line status information to the processor
- decodes line control information from the processor

Quantity

One is required for each network loop connected to the carrier shelf at the local equipment location.

Location

Place the QPC63 in the following positions:

- slot 1 for the first network loop in the local carrier shelf
- slot 5 for the second network loop in the local carrier shelf

QPC65 Remote Peripheral Switch Card

Function

Each SL-1 loop at a remote site has a remote peripheral switch (RPS) card associated with it. The card provides:

- shelf, card, and line enables, along with the bypass bit to the shelves it serves at the remote site
- cyclic scanning of the terminals it serves for incoming signaling messages
- monitoring of timeslot 0 for outgoing messages from the peripheral signaling (PS) card to the RPS or terminal
- assembling of incoming messages (RPS to PS)

Quantity

One is required for each network loop.

Location

Place the QPC65 in the following positions:

- slot 1 for the first network loop in the remote carrier shelf
- slot 5 for the second network loop in the remote carrier shelf

QPC66 2 Mbaud Converter Card

Function

The QPC66 converts two carrier loops into a single SL-1 loop.

Quantity

Two are required for each network loop: one in the local carrier shelf, and one in the remote carrier shelf.

Location

Place the QPC66 in the following positions:

- slot 3 for the first network loop in each carrier shelf
- slot 7 for the second network loop in each carrier shelf

QPC67 Carrier Maintenance Card

Function

The QPC67 performs the following functions:

- conducts fault-locate testing, using an M-type (3017 Hz) fault-locate filter
- detects DC for the fault-locate pair by means of DC-detection circuitry
- facilitates software maintenance testing, using loopback relays
- terminates and gives access to the order-wire pair through a jack and binding posts on the faceplate

Quantity

One is required in each carrier shelf.

Location

Place the QPC67 in slot 9 in each carrier shelf.

QPC85, QPC190, and QPC355 5/12 V Converter Cards

Function

The QPC85, QPC190, and QPC355 cards convert -48 V dc to $+5$ V dc and $+12$ V dc for the carrier shelves.

CAUTION

To avoid damage to the equipment, do not install QPC190 or QPC355 cards in QSD11B series A and QSD6B series A shelves; these shelves only work with a QPC85 card. Use QPC190 or QPC355 cards only in QSD11B series B and QSD6B series B shelves, or in QSD11C and QSD6C shelves.

Quantity

One is required for each carrier shelf.

Location

Place the QPC85, QPC190 or QPC355 in slot 10 in each carrier shelf.

QPC99 Carrier Interface Card

Function

The QPC99 performs the following functions:

- With two carrier line receivers and built-in 7.5 dB pads, it converts the bipolar line signals into TTL level signals. It also provides facilities for LD-1 carrier looping, monitors the system, and invokes emergency transfer if the carrier fails.
- By means of option switches on its circuit board, the card can be configured for a variety of locations and loopback conditions. In cards of vintages F and later, the -7.5 dB pads are also switch selectable. The settings on switches 1 through 4, and 7 through 12, determine the location of the card. Switches 5 and 6 determine loopback conditions. With switch 5 closed, the loop carrier is looped for an additional 8 seconds. With switch 6 closed, loopback occurs when DC is on the FL (fault-locating) pair and bipolar violations occur on the carrier. With switch 6 open, loopback occurs when
 - DC is on the fault-locate pair and TRIOS is present
 - DC is on the fault-locate pair and excessive bipolar violations (BPV) occur
 - TRIOS is present
- The later vintages also have a ROUT jack for each channel to allow a test signal to input into the system. A manual loopback (MLB) switch is also added to allow looping of the system for fault clearing. All other features of the earlier vintages are retained.

Quantity

Two are required for each network loop: one in the local carrier shelf, and one in the remote carrier shelf.

Location

Place the QPC99 in the following positions:

- slot 4 for the first network loop in each carrier shelf
- slot 8 for the second network loop in each carrier shelf

Cables

The following cables are used in RPE installations:

- NE-A18Q to connect the local carrier shelf to a network card and to connect the PE shelves to each other and to the remote carrier shelf.
- NE-A25B cables are used to connect jacks C and D of the local and remote carrier shelves to the cross connect terminal, and to connect jacks A, B, C, and D of each PE shelf to the cross connect terminal.

QBL14 Power Distribution Box

Function

Distributes -48 V to a maximum of four carrier shelves. Equipped with circuits to provide a low voltage (-42 V) disconnect.

Quantity

One is required for every four carrier shelves.

Location

The QBL14 is placed above the QUX3 Power Distribution Unit, or above the QBL5 Power Distribution Box in a QCA8 cabinet. It may also be installed in a QCA6 cabinet above the QUX1 or QBL3 unit. In QCA28 and QCA37 cabinets, the unit can be mounted in any unequipped shelf location.